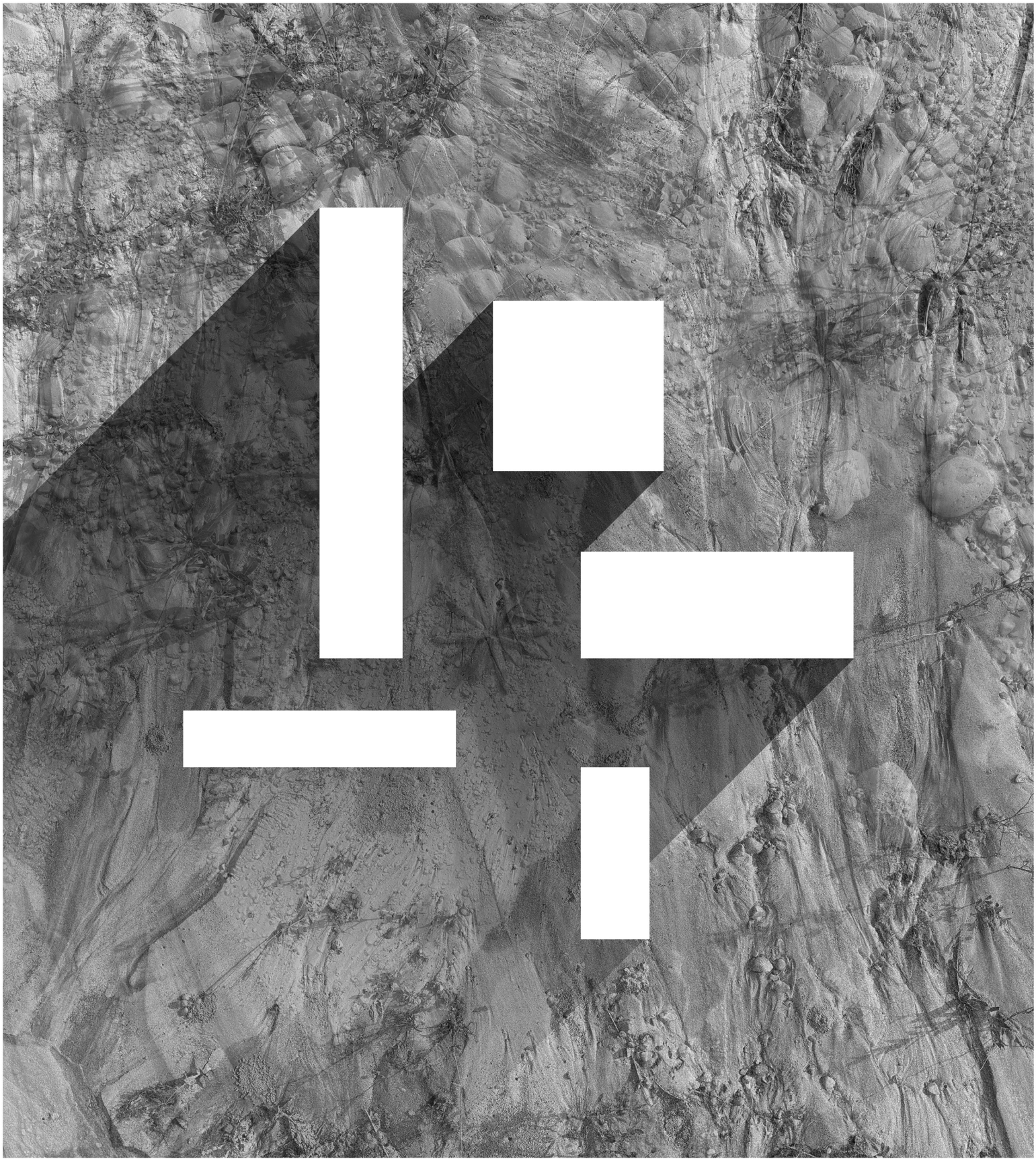

ALI HASAN

Portfolio

2025

01
RECLAIMING ABSCENCE

Master's Thesis
Academic Project
Southern Ontario, CA
2025

02
STEAMLINE

Adaptive reuse
Competition Project
Cambridge, CA
Spring 2025

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Fall 2023

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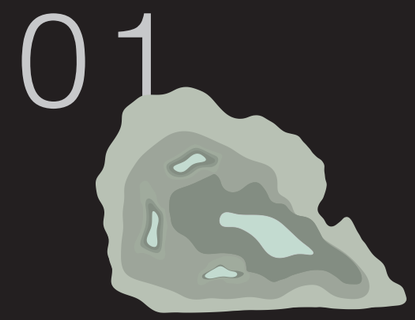
Toronto, CA
Winter 2023

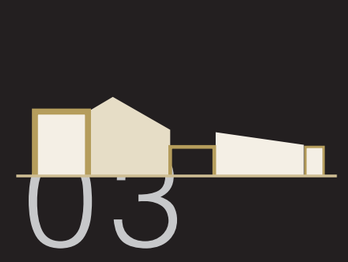
05
LUMOS

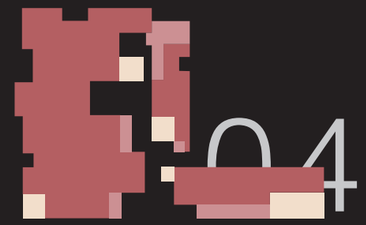
Design + Farbication
Research Elective
Fall 2024

06
MISCELLANEOUS

Competition +
Professional Work +
Publishing







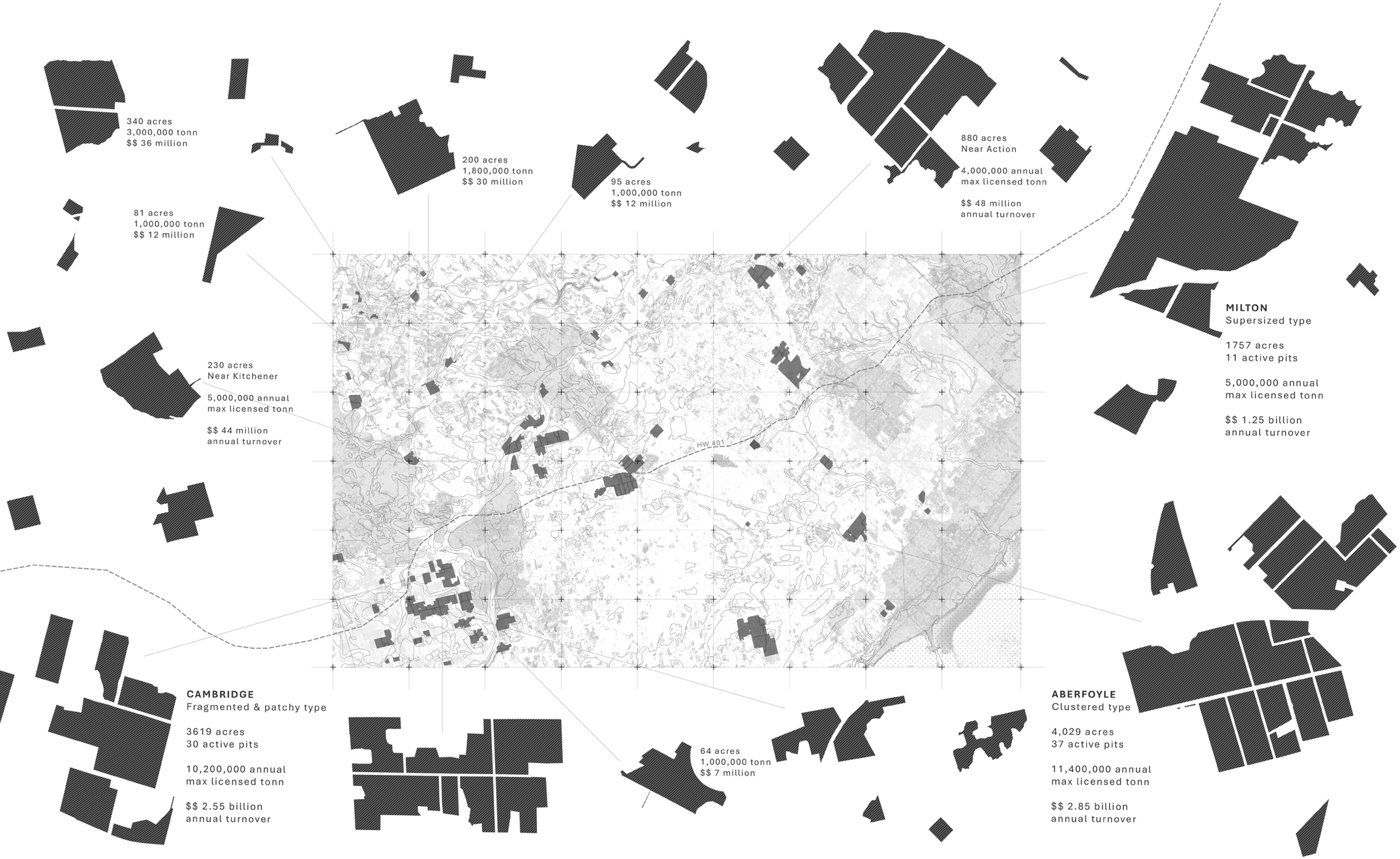
01

RECLAIMING ABSCENCE

Building collective futures in Ontario’s Gravel Belt

Project type: Thesis Work
Location: Southern Ontario
Supervisor: Lola Sheppard
Work type: Individual Project
Time: 2025

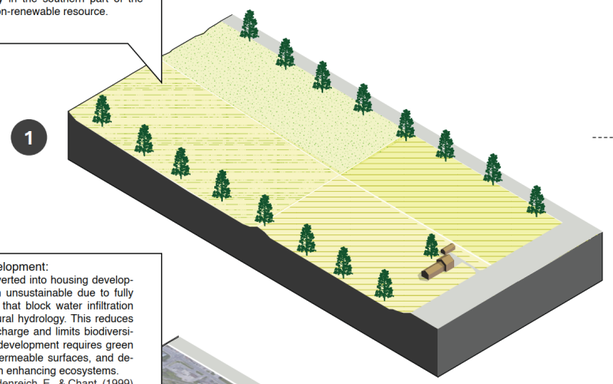
Ontario’s gravel mining belt has left behind fractured ecosystems, lost farmland, and unchecked suburban sprawl. To Confront Absence, this thesis reframes these scarred landscapes as active participants in ecological and social networks, dismantling the life/non-life dichotomy through Povinelli’s geontologies and Bélanger’s Extraction Empire. To Reclaim Absence, it explores modes of ‘productive urbanism’, restoration, and community stewardship rooted in land narratives. In response to economic volatility, gravel pits transform into dense, climate-resilient neighborhoods, embedding short supply chains, controlled-environment food production, and regenerative strategies. Challenging conventional architectural practice, this thesis redefines our broken relationship with land as one of renewal and resilience.



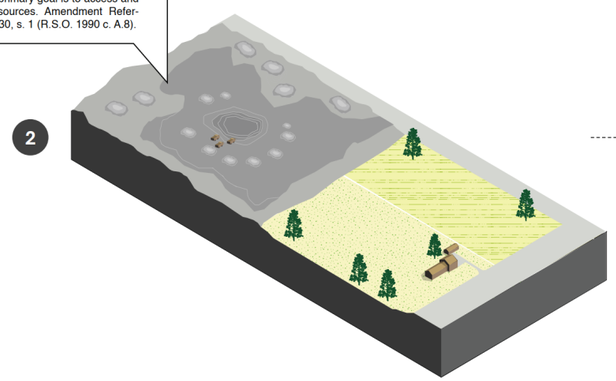
HW 401: SOUTHERN ONTARIO EXTRACTION CORRIDOR

Along the Highway 401 corridor, a dense network of gravel pits fuels the material demand of the Greater Golden Horseshoe. In Cambridge, Milton, and Aberfoyle, entire belts of land are consumed to sustain the concrete and asphalt skeleton of suburban growth. This map reveals how extraction is deeply entangled with development, showing that suburbs are not built apart from the pit but are fundamentally contingent upon it.

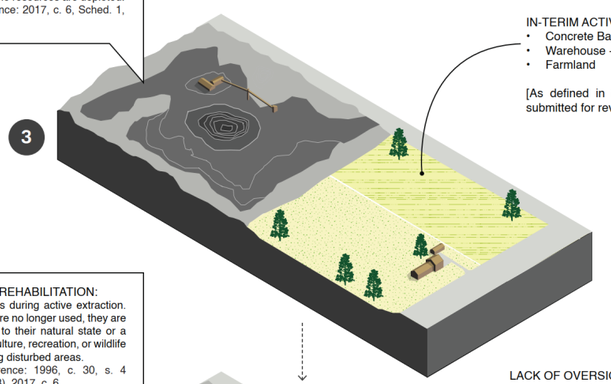
FARMLAND:
Gravel pits in Ontario are increasingly being developed on some of the province's most fertile and productive farmland. This is a significant concern because Ontario's prime farmland, particularly in the southern part of the province, is a non-renewable resource.
Source:



EXCAVATION PHASE:
Gravel pits begin with the excavation of unconsolidated aggregates such as sand and gravel. This phase involves significant land modification, leading to the creation of a pit or quarry. The primary goal is to access and extract the resources. Amendment Reference: 1996, c. 30, s. 1 (R.S.O. 1990 c. A.8).



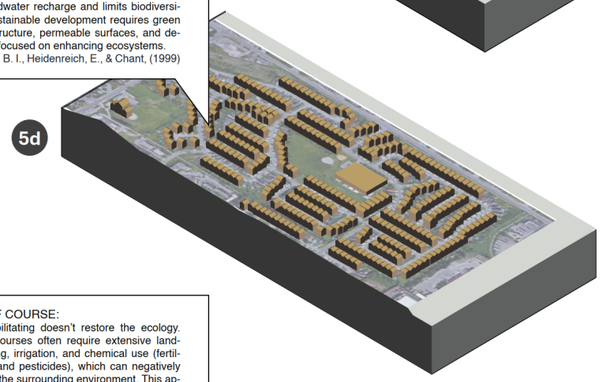
OPERATION AND MANAGEMENT:
During the operational phase, aggregate resources are continuously extracted, processed, and removed from the pit. This phase continues until the gravel pit is no longer economically viable or the resources are depleted. Amendment Reference: 2017, c. 6, Sched. 1, s. 1.



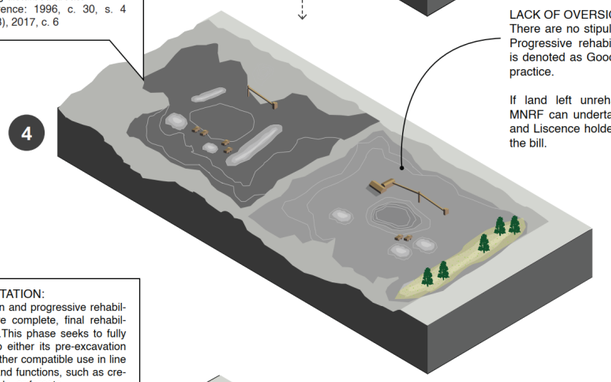
IN-TERIM ACTIVITIES
- Concrete Batching Plant
- Warehouse + Parking
- Farmland

[As defined in the Siteplan submitted for review]

Suburban development:
Gravel pits converted into housing developments are often unsustainable due to fully paved surfaces that block water infiltration and disrupt natural hydrology. This reduces groundwater recharge and limits biodiversity. Sustainable development requires green infrastructure, permeable surfaces, and designs focused on enhancing ecosystems.
Roots, B. I., Heidenreich, E., & Chant, (1999)



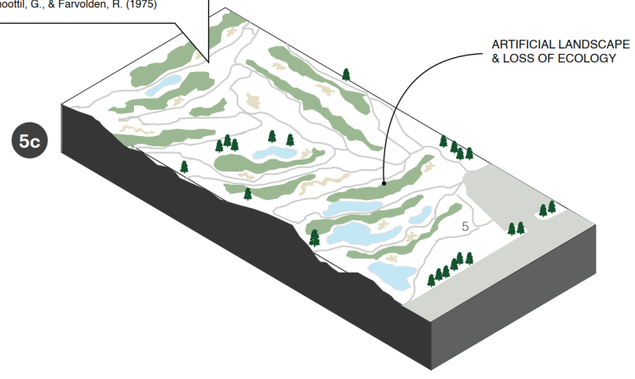
PROGRESSIVE REHABILITATION:
Rehabilitation starts during active extraction. As parts of the pit are no longer used, they are gradually restored to their natural state or a new use, like agriculture, recreation, or wildlife habitats, minimizing disturbed areas.
Amendment Reference: 1996, c. 30, s. 4 (R.S.O. 1990 c. A.8), 2017, c. 6



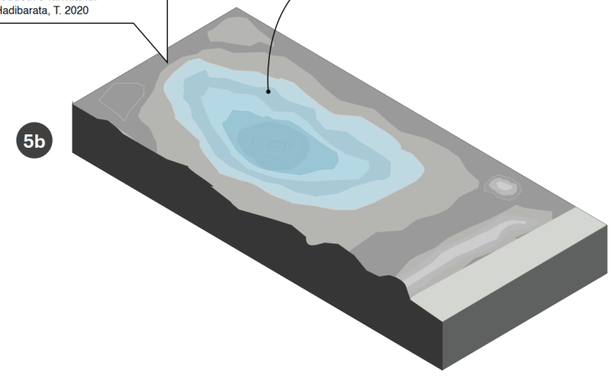
LACK OF OVERSIGHT
There are no stipulations for Progressive rehabilitation, it is denoted as Good industry practice.

If land left unrehabilitated, MNRF can undertake rehab and Liscence holder will foot the bill.

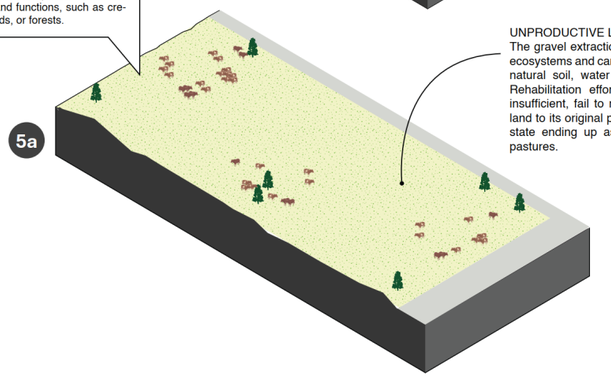
GOLF COURSE:
Rehabilitating doesn't restore the ecology. Golf courses often require extensive landscaping, irrigation, and chemical use (fertilizers and pesticides), which can negatively affect the surrounding environment. This approach is often seen as a superficial fix.
Mulamoottil, G., & Farvolden, R. (1975)



WATER FEATURE:
Filling a gravel pit with water for rehabilitation is problematic because it permanently changes the land, making it unusable for agriculture. This method leads to a loss of arable land, as ponds or lakes replace the productive farmland.
Awa, S. H., & Hadibarata, T. 2020



FINAL REHABILITATION:
Once all excavation and progressive rehabilitation activities are complete, final rehabilitation takes place.This phase seeks to fully restore the land to either its pre-excavation condition or to another compatible use in line with neighboring land functions, such as creating parks, wetlands, or forests.

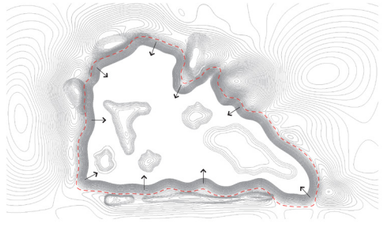


THE LIFE CYCLE OF A GRAVEL PIT

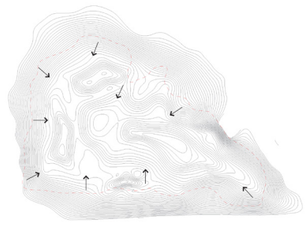
Gravel pits in Ontario transition from farmland into deep scars of extraction, often left abandoned or only superficially rehabilitated. While some sites may remain active for decades before being converted into artificial lakes, golf courses, or suburban subdivisions, these afterlives typically prioritize expediency and market value, rarely restoring ecological function or agricultural productivity. This thesis instead proposes housing rooted in stewardship, where communities confront the housing crisis while cultivating food and regenerating the land.

GRAVEL PIT REHABILITATION

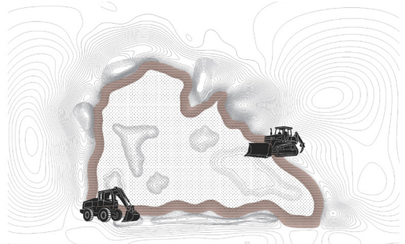
Situated among operational quarries, this vision of gravel pit rehabilitation proposes a concentric ecology of housing, food systems, and restoration, transforming Ontario's extractive belt into a productive suburban corridor.



Initial extraction condition
A barren post-extraction landscape, the raw gravel pit remains exposed, lacking vegetation and ecological activity.

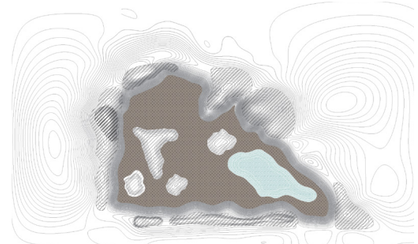


Passive Natural Recovery
Partial self-regeneration begins over several decades as wind, rain, and wildlife slowly introduce new growth and water accumulation.



Anthropogenic Reuse
The site is flattened and redeveloped into suburban housing, prioritizing human habitation over ecological regeneration.

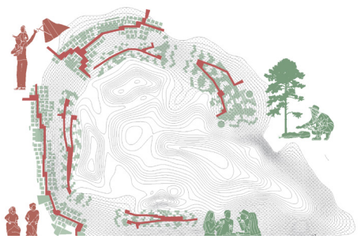
Initial extraction condition
A barren post-extraction landscape, the raw gravel pit remains exposed, lacking vegetation and ecological activity.



Passive Natural Recovery
Partial self-regeneration begins over several decades as wind, rain, and wildlife slowly introduce new growth and water accumulation.

Graded Terrain
The gravel pit is flattened to enable future land uses, creating a neutral base for either ecological or built interventions.

Long-Term Natural Succession
Left untouched, the site undergoes complete ecological restoration, requiring up to 400 years for a fully re-established ecosystem.



Hybrid Ecological Restoration
An integrated approach where human intervention supports accelerated ecosystem recovery, balancing development with biodiversity.

Graded Terrain
The gravel pit is flattened to enable future land uses, creating a neutral base for either ecological or built interventions.

Long-Term Natural Succession
Left untouched, the site undergoes complete ecological restoration, requiring up to 400 years for a fully re-established ecosystem.

Greenhouses
Enables community-based cultivation and workshops
Acts as thermal buffer zones in seasonal transitions
Supports seed exchange and hyper-local economies
Year-round food production within walking distance

Agricultural Fields
Restores soil health and builds food resilience
Strengthens local food systems and self-reliance
Collective farming and multigenerational participation
Revives land once lost to extraction and sprawl

Apartment Balcony
Extends domestic life outdoors for resting, or socializing
Enhances passive surveillance and street activation
Offers private retreat with public connection
Enables vertical gardening and ecological awareness

Allotment
Invites residents to co-tend native plants and small trees.
Initiates soil healing through dense native planting clusters following Miyawaki technique
Builds biodiversity with multi-layered tree and shrub species.
Offers residents and retirees a sense of purpose and land connection through forest stewardship

Woodland Trail
Offers quiet routes for walking and observing seasonal change.
Supports birdwatching and connects residents with wildlife corridors.
Allows passive access to view ongoing ecological restoration.
Builds familiarity with the land, fostering care through repetition.

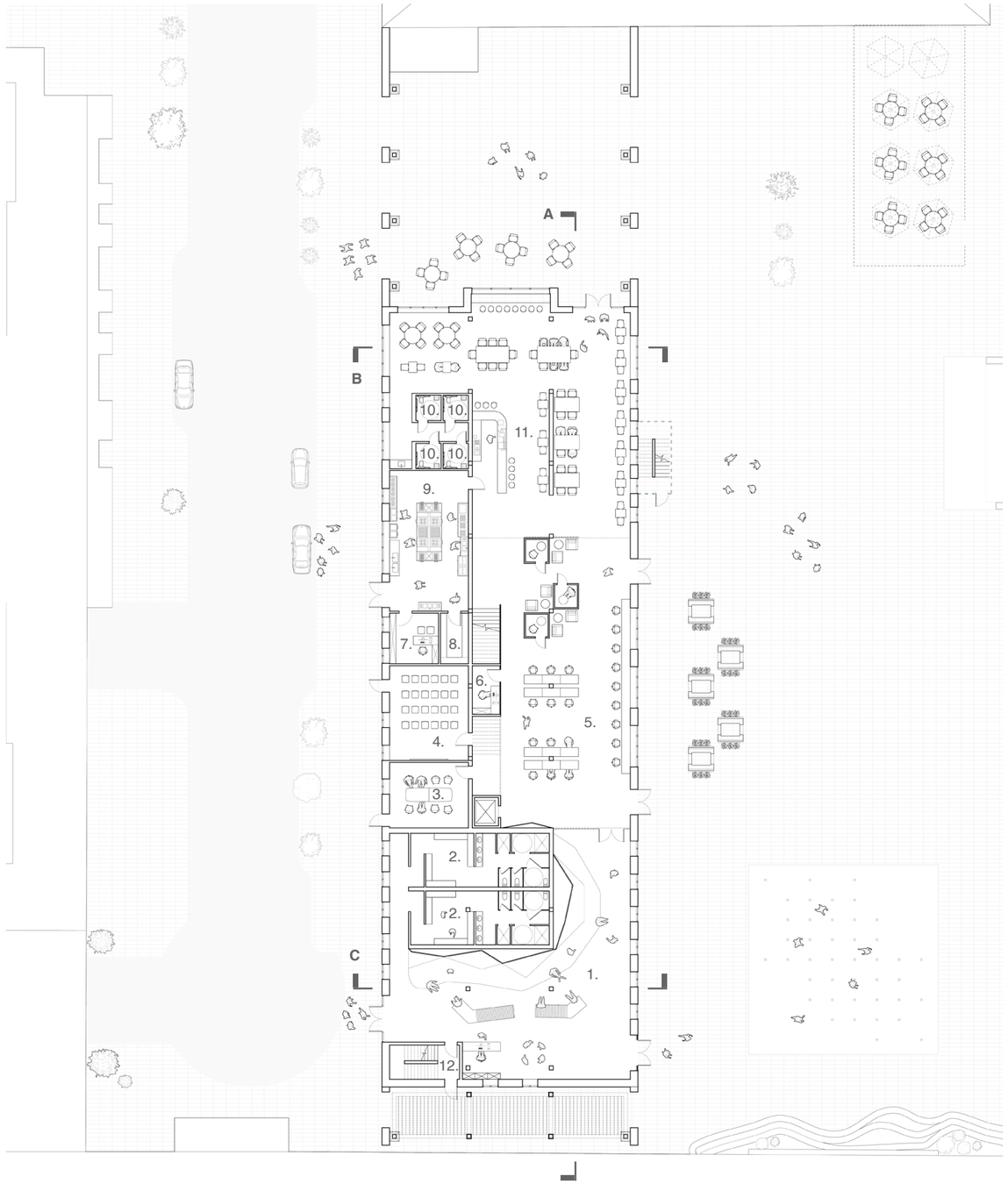
02

STEAMLINE

Adaptive Reuse into a Wellness Retreat

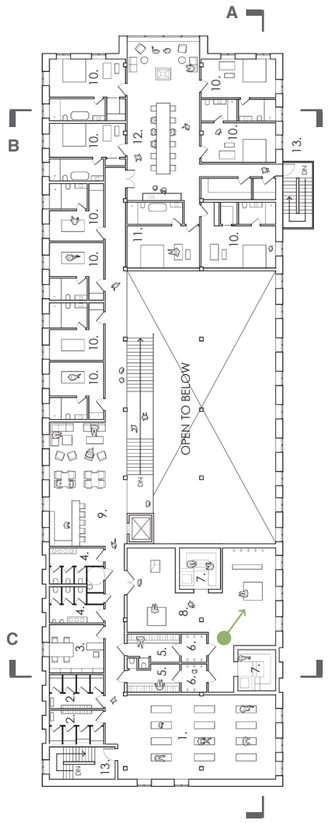
Project type: Competition
Location: Downtown, Cambridge
Supervisor: John McMinn
Work type: Group Project
Time: 2025
Award: CSC Student Design Challenge Winner

The Gas Light District in downtown Galt, once an industrial factory, has been reimagined as a vibrant hospitality hub that honors Cambridge's history while adapting to contemporary needs. Situated next to the Tapestry wedding hall, the proposal complements its program by introducing a wellness-oriented hospitality space that also offers specialty sweets and experiences tailored for bridal events. The design preserves the district's industrial character with exposed beams, columns, and roof structures while layering modern amenities that invite both locals and visitors to engage with the district daily. A central atrium links two levels of programming: the ground floor features public spaces such as a café, co-working area, and bouldering park that foster creativity, activity, and social connection, while the second floor provides quieter, restorative uses including flexible gym space, a sauna, and hostel accommodations. Together, these elements transform the site into a holistic space offering spaces to recharge, connect, and rejuvenate.



GROUND FLOOR PLAN

1. Bouldering Gym
2. Washroom / Change Room
3. Meeting Room
4. Seminar Room
5. Co-working Atrium
6. Reception
7. Office
8. Cold Room
9. Commercial Kitchen
10. Universal Washroom
11. Restaurant
12. Fire Escape



Second Floor Plan

LEGEND

1. Flexible Wellness Space
2. Change Room
3. Office
4. Shared Washroom
5. Public Sauna
6. Public Showers
7. Private Sauna
8. Sauna Lounge
9. Open Lounge
10. Wellness Suite
11. Meditation Room
12. Shared Living Space

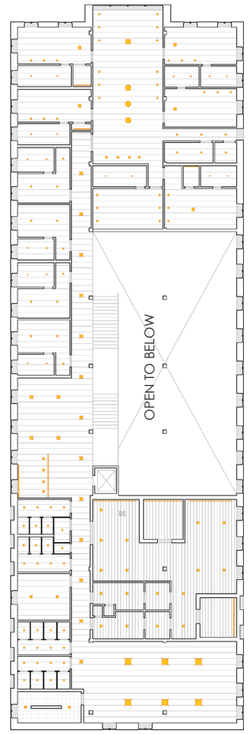
Existing Wood Ceiling

Solid Acoustic Panel

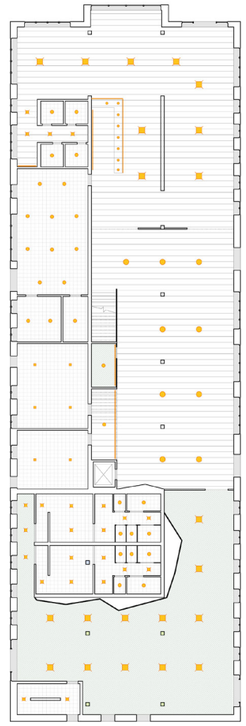
Wood Panel

Mesh Ceiling Panels

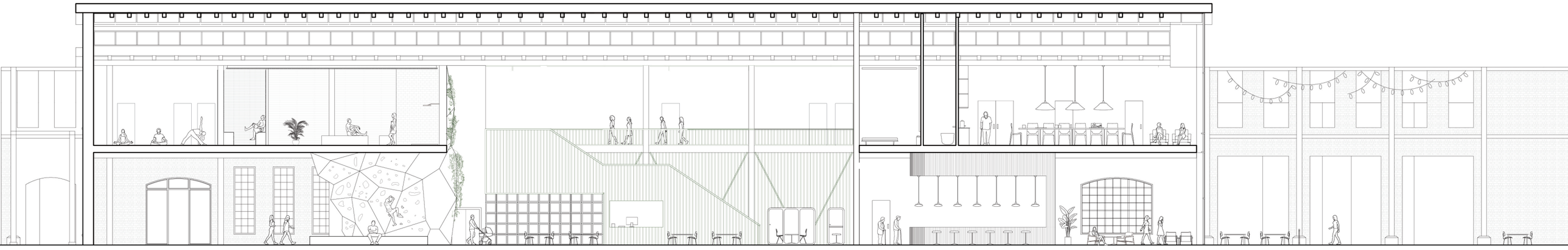
0 1 2 3 4 5 10



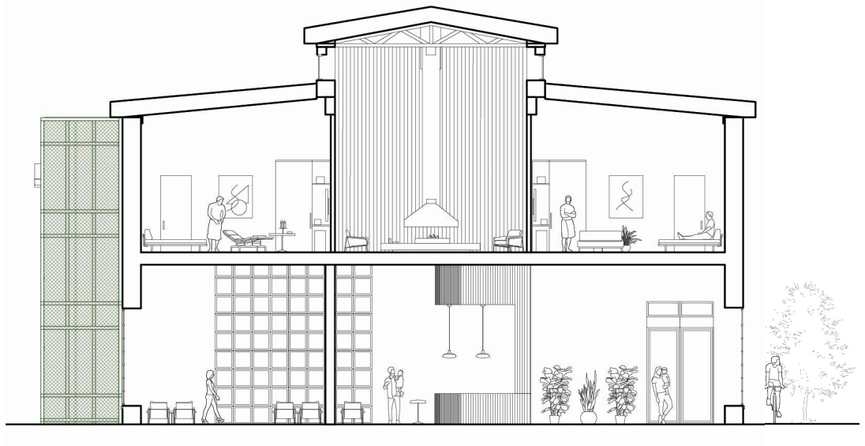
RCP First Floor



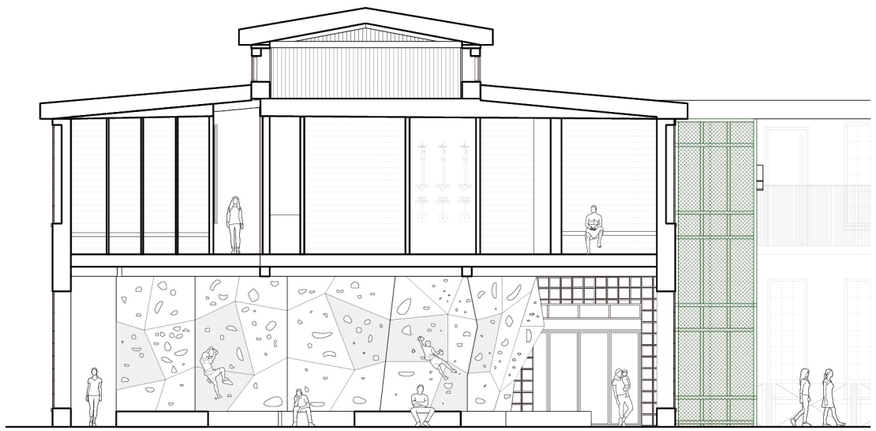
RCP Second Floor



Transverse section AA'
Illustrating the adaptive reuse of the Gas Light District's industrial hall into a wellness hub, featuring a bouldering gym, café, co-working atrium, and upper-level sauna and accommodation spaces integrated within the original structural frame.



Section BB’
TA vertical composition of rejuvenation and gathering, where intimate wellness suites rise above a restaurant setting that activates the ground floor with high-tea and dining experiences.



Section CC’
The programmatic layering of wellness and recreation positions the saunas as elevated retreats above the active gym and climbing zone to balance intensity and repose.

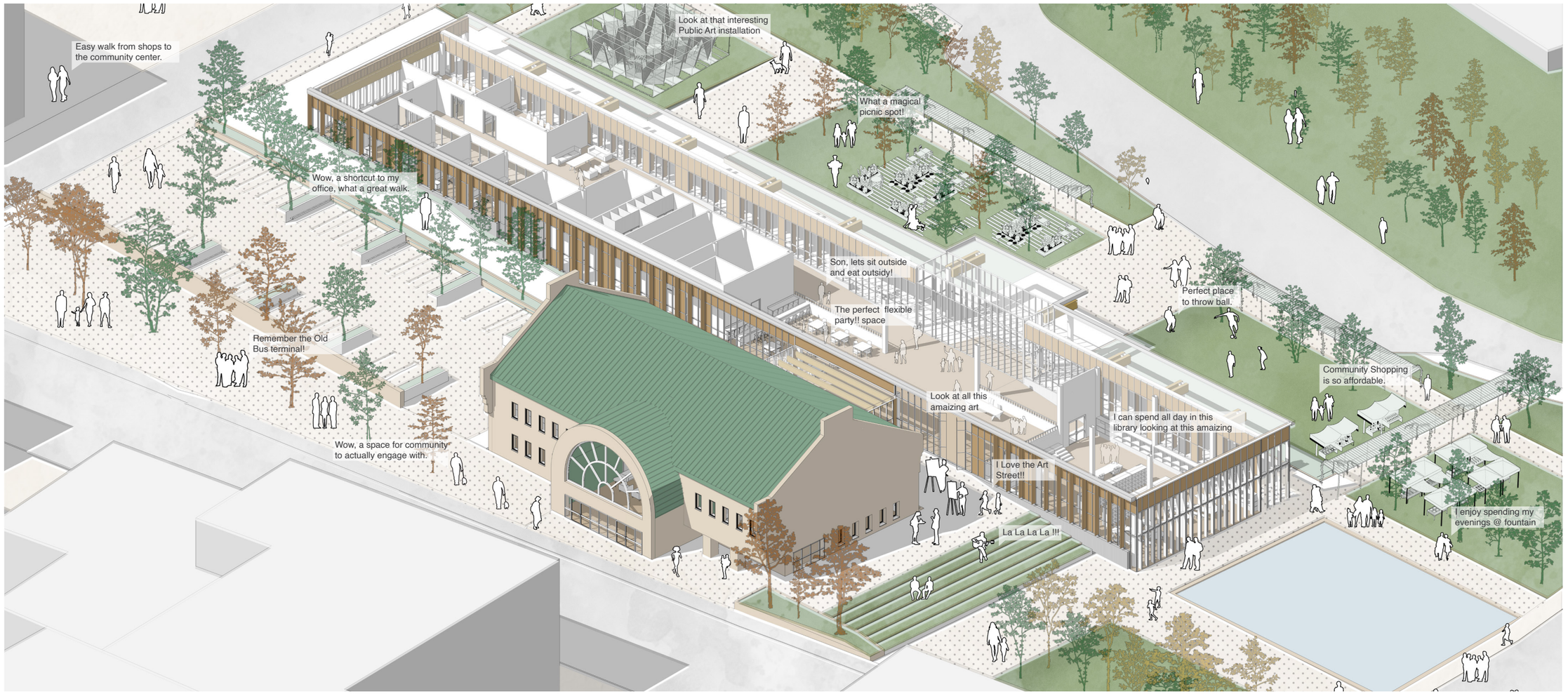
03

URBAN PORTAL

Bus Terminal conversion to Community Center

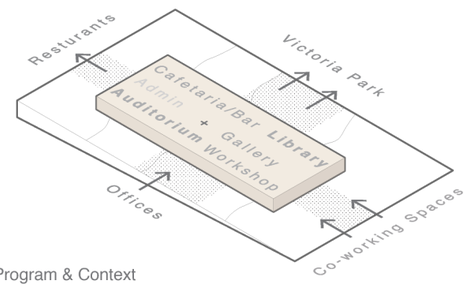
Project type: Academic
Location: Downtown, Kitchener
Supervisor: Mohd. Araji, Shiyu Wei
Intention: Comprehensive Design Studio
Work type: Individual
Time: Fall 2023

The former Bus Terminal is reborn as more than a building. It becomes the heartbeat of the community. Seamlessly linked to Victoria Park and the lively Gaukel Street, it transforms into a vibrant hub and a portal to a more connected urban life. This renewal is not simply about bricks and mortar, but about weaving a shared spirit of place. The Old Bus Terminal stands as an anchor for the neighborhood, breathing new life into every corner it touches.

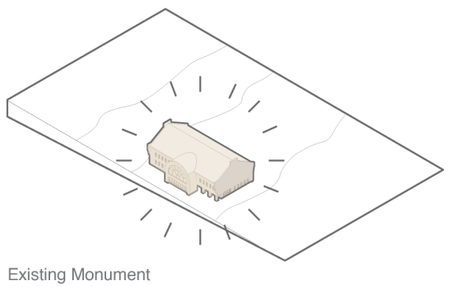


Axonometric

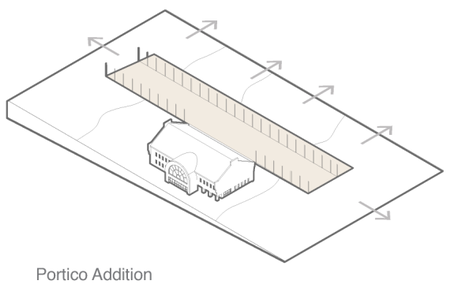
The Old Bus terminal and the new additional form are juxtaposed to establish a public realm. With one axis which is open and flexible, the ther intimate.



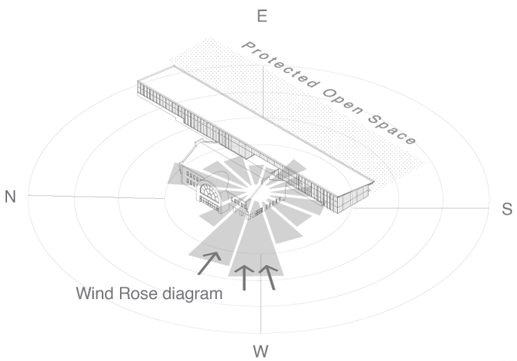
Program & Context



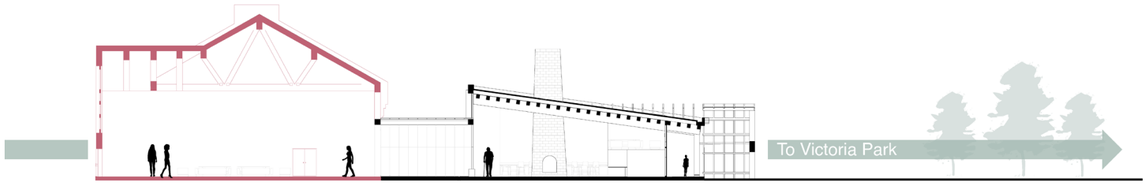
Existing Monument



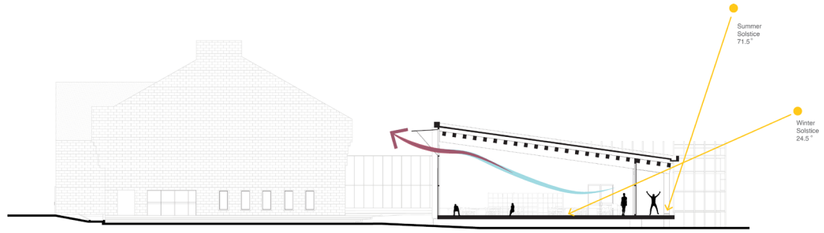
Portico Addition



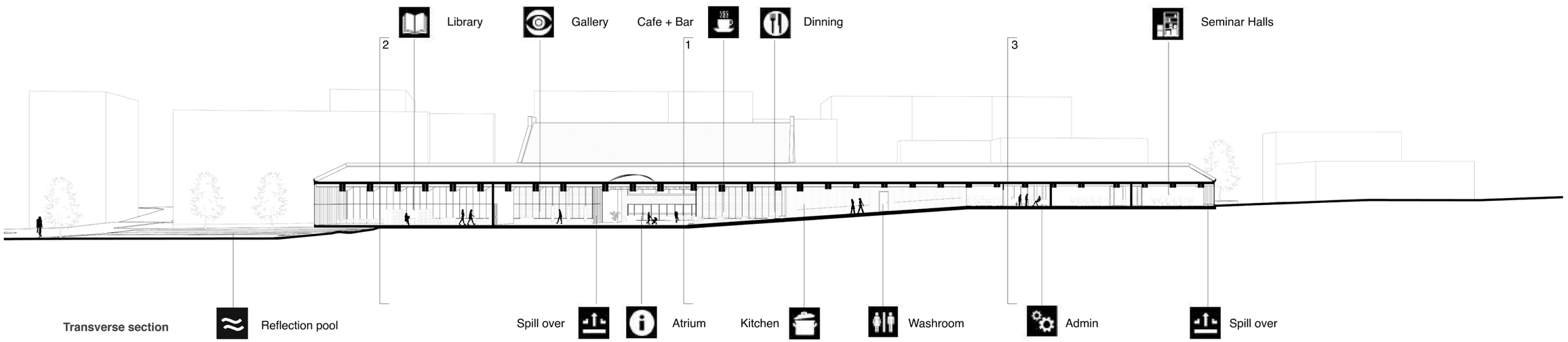
Wind Rose diagram



1 Old Terminal - Community Monument | New Extention - Community Gateway



2 Solid Volume | Gasket | Luminous Portico



Transverse section

Front Elevation | Extending | Retaining Monument to Collective Journey | through a Luminous Addition

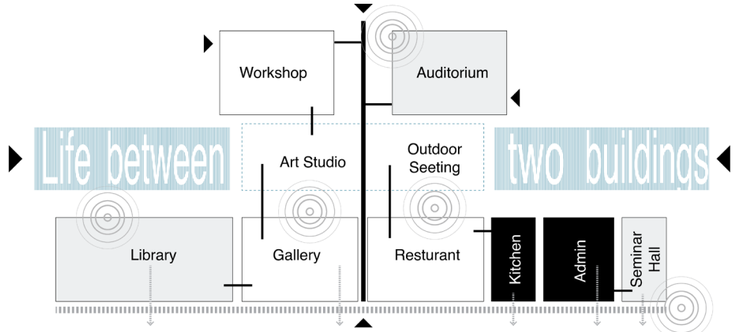
Elevation & Section
The addition responds to the propostion of existing form, to establish a relationship between old and new.

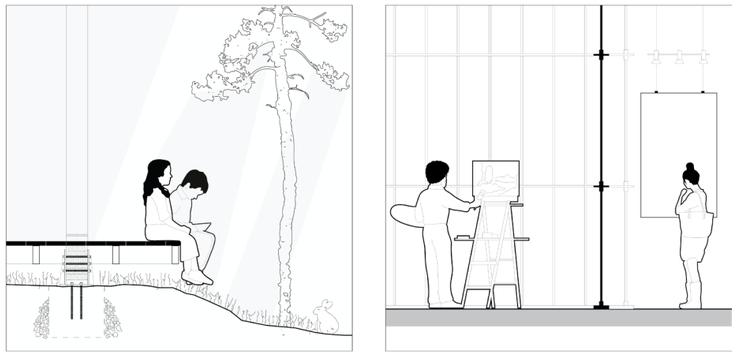
Left: Exterior Render
The new portico addition extends continuity to the landscape and Victoria Park, celebrating the neighborhood.

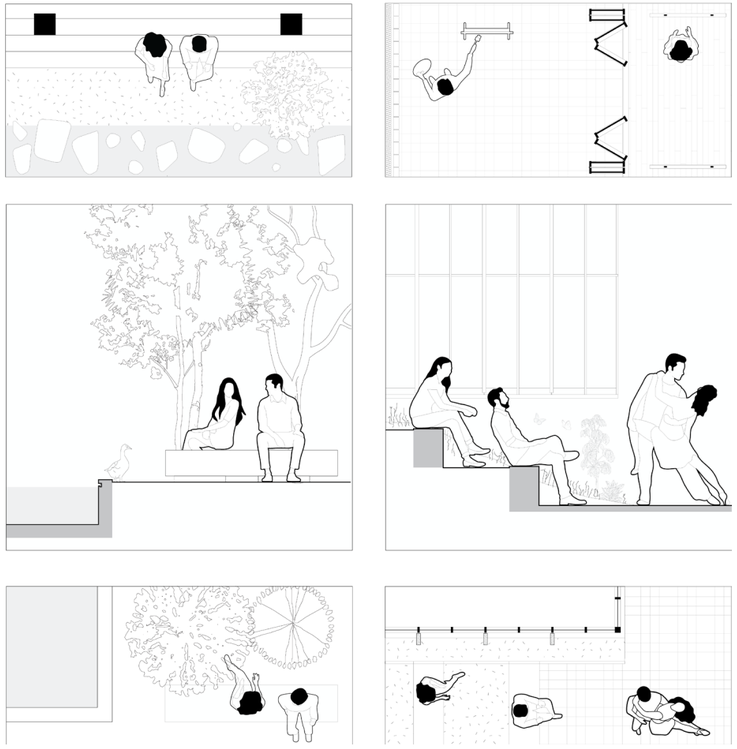
Left: Interior Renderv
The reflecting planes and shared axis establish a spatial dialogue between the two forms.

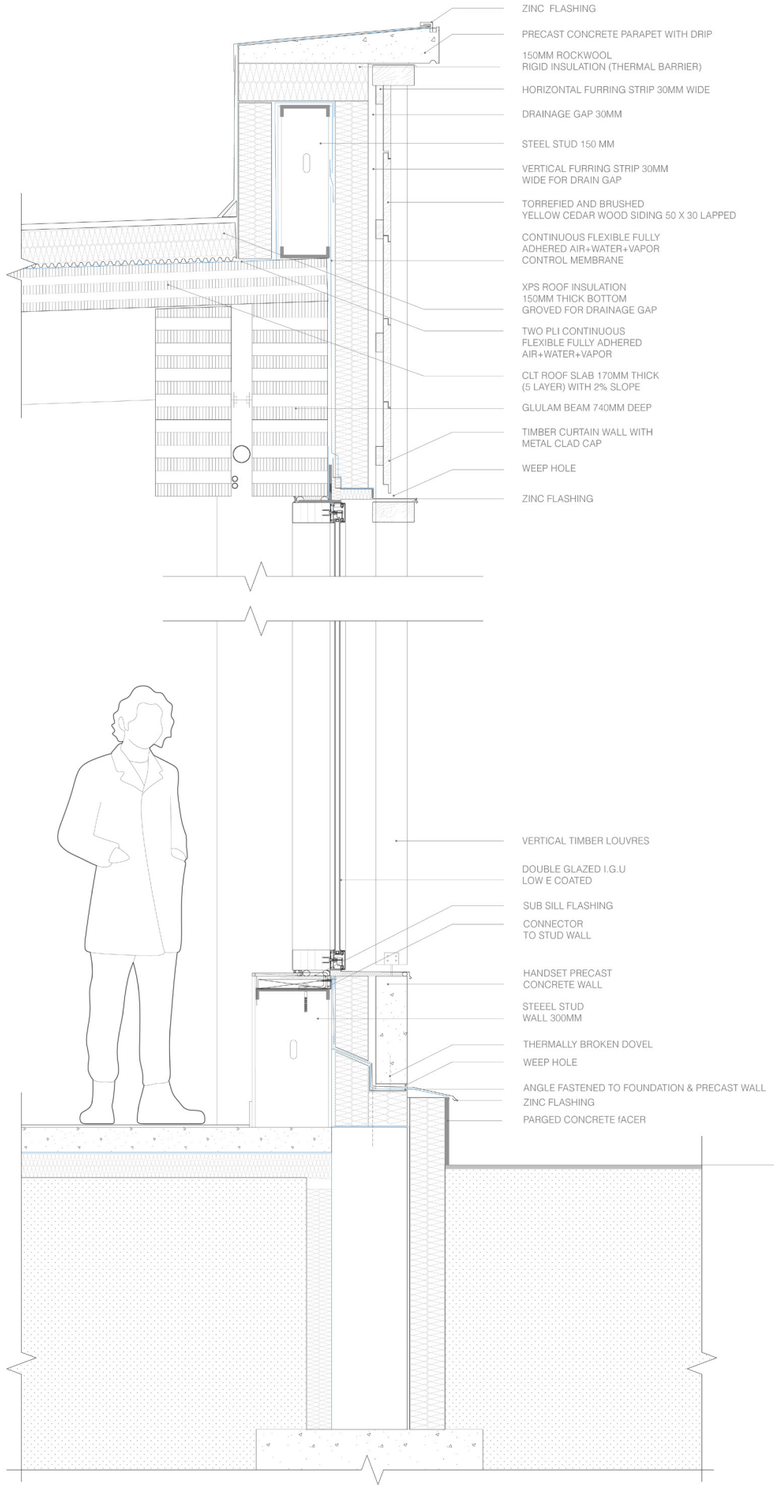
Right: Zoning
Life between two buildings shaped by spillover spaces, sheltered from wind yet open to the sky.

Right: Threshold vignettes
The building's spatial elements mediate between the contoured landscape and people interacting with each other through them.

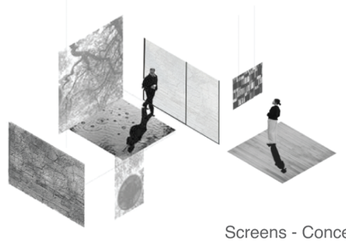




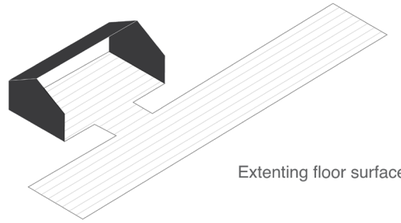




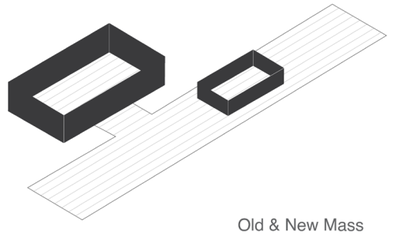
Enclosure section
Detailing the transition between precast base, glazed openings, and timber cladding, emphasizing continuity between structure and envelope.



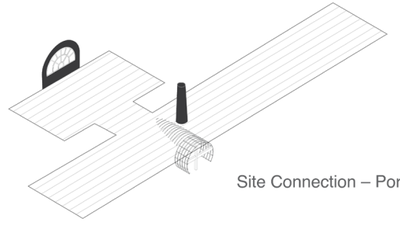
Screens - Concept collage



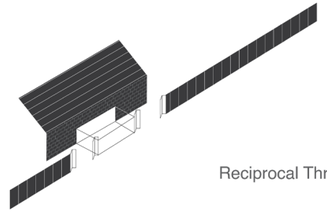
Extenting floor surface



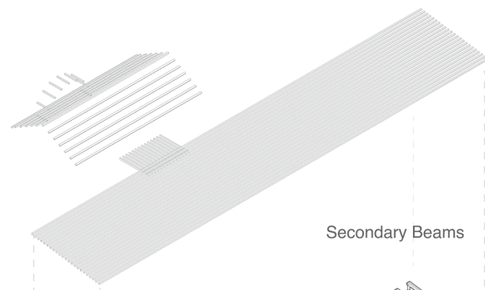
Old & New Mass



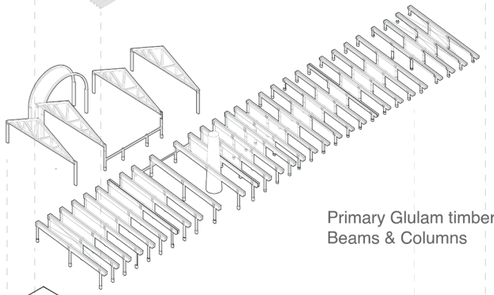
Site Connection – Portico



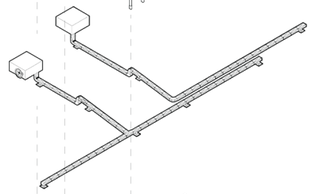
Reciprocal Thresholds



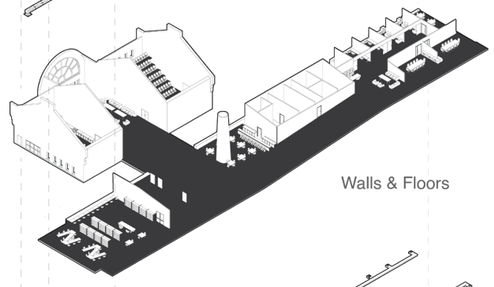
Secondary Beams



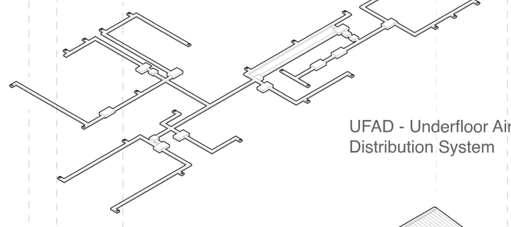
Primary Glulam timber
Beams & Columns



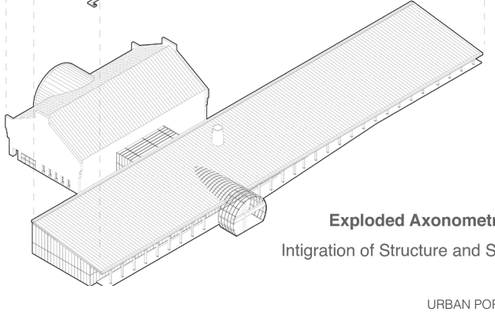
FAHU - Fresh Air
Handling system



Walls & Floors



UFAD - Underfloor Air
Distribution System



Exploded Axonometric
Intigration of Structure and Systems

04

CORRIDORS TO COMMONS

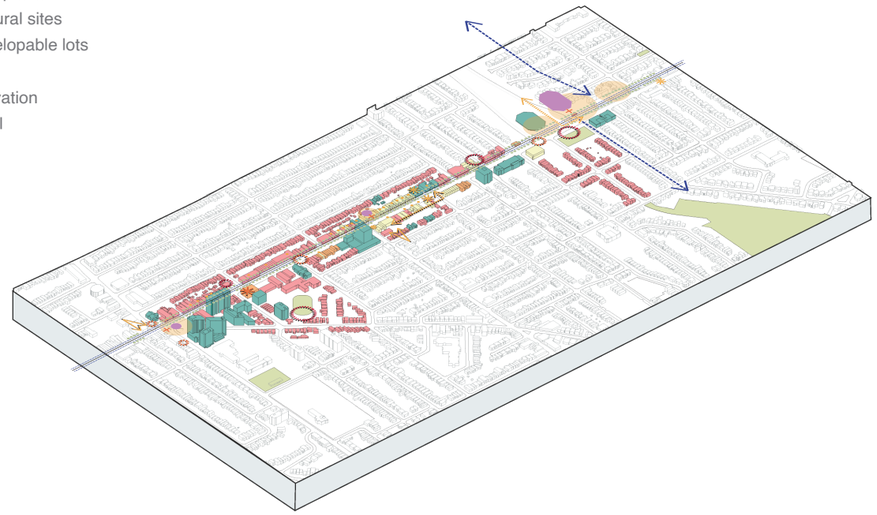
Bus Terminal conversion to Community Center

Project type: Academic
Location: Eglington West, Toronto
Supervisor: Val Val Rynnimeri, Sam Ebby
Intention: Urban Design + Housing Studio
Work type: Group (Urban) + Individual (Housing)
Time: Winter 2023

The project reimagines transit infrastructure as a platform for reparative urbanism rather than displacement. Situated along Toronto's Eglinton West corridor, home to Little Jamaica, a neighborhood shaped by Caribbean migration and cultural production. The project responds to the economic and social rupture caused by the Eglinton Crosstown LRT. Through community interviews and policy analysis, it identifies the failures of speculative development and proposes land and design strategies rooted in collective ownership, memory, and care. The proposal transforms public land at transit nodes into community-controlled housing, cultural spaces, and cooperative retail, organized through the principles of Retain, Renovate, and Add. By leveraging architectural tools to support Black-led stewardship and anti-speculative growth, the project envisions a future where infrastructure restores belonging, redistributes value, and sustains the cultural commons of Little Jamaica.

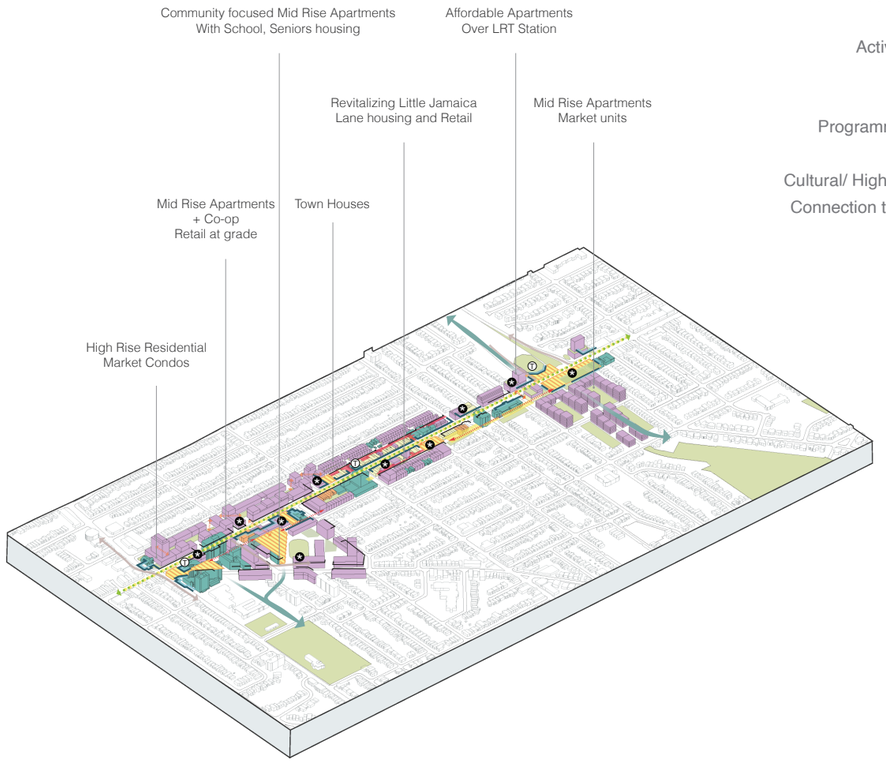
Legend

- LRT Station (Underground)
- Plaza at Station Areas
- Public art locations
- Significant Views
- Significan promenade - Raggae lane, Alber
- Johnson police protest route (L to R)
- New connection to Trails and Ravines
- Proposed protected Bike Lane
- Main street trees
- Important Public buildings
- Cultural Landmarks
- Cultural/ civic plaza
- Potential cultural sites
- Potenial Developable lots
- Retain
- Facade renovation
- New Proposal



Urban Analysis

Revitalizing Eglinton West while preserving the spirit and identity of Little Jamaica by mapping its strenghts and opportunities.

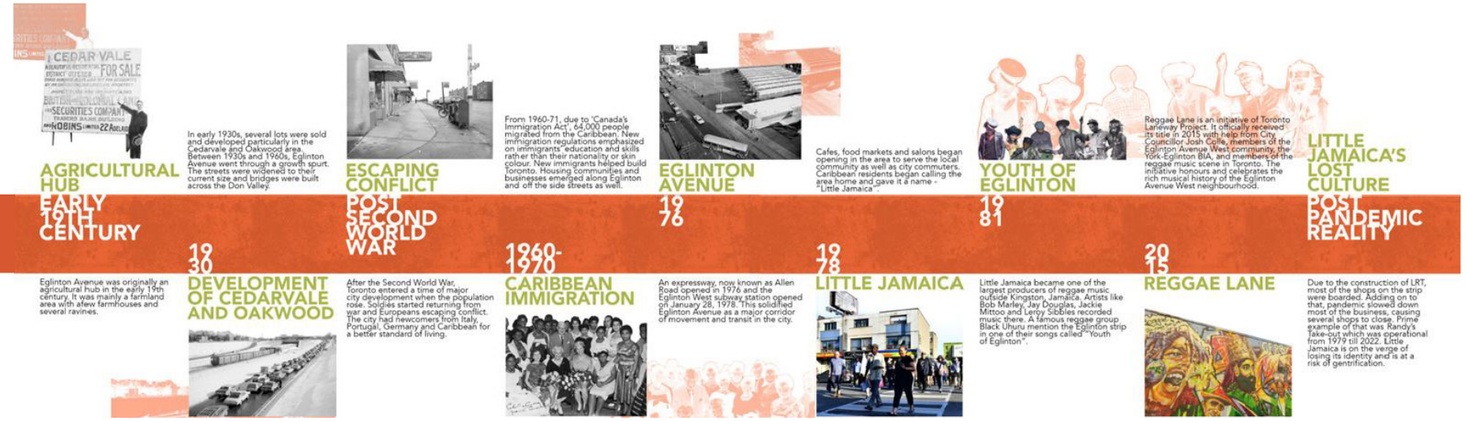


Legend

- Eglington Ave
- Major Vehicular Routes
- Pedestrian Connection
- Pedestrian Routes
- Active Streetwall Edge
- Streetwall Edge
- Lrt Stations
- Programming Opportunities
- Activated Plaza
- Cultural/ High Footfall Programs
- Connection to Ravines & Parks

Urban Stratergy

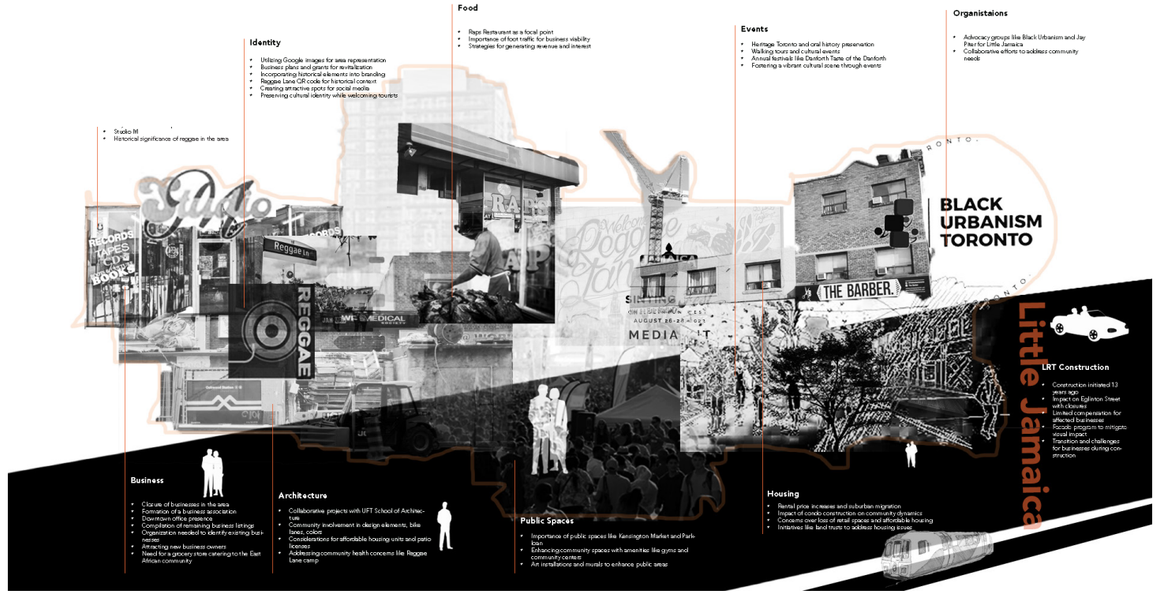
Activating Little Jamaica through inclusive mixed-use growth, vibrant street life, and the renewal of cultural storefronts.



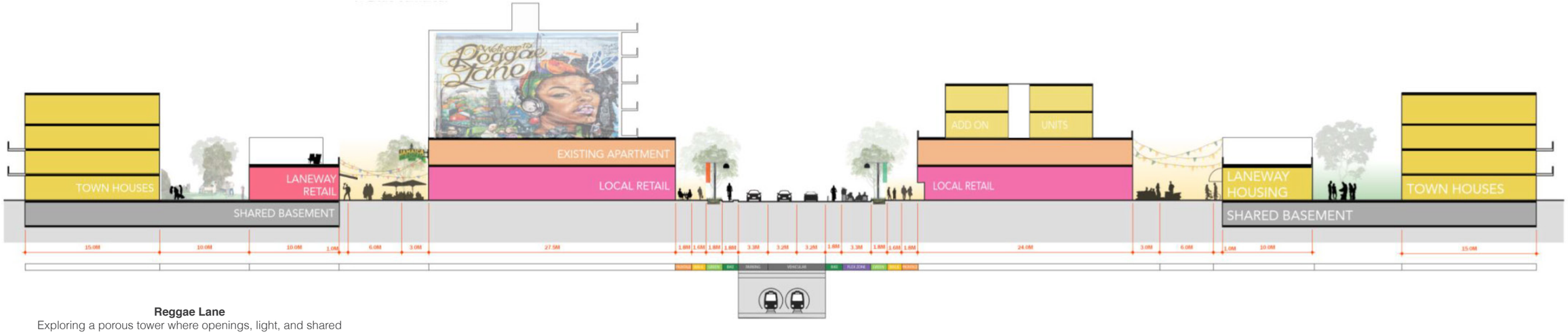
Urban Morphology
Historic development showing the slow, steady growth of the built fabric and the later insertion of the LRT corridor.

Facade Stratergy
Preserving and adapting existing storefronts to sustain neighborhood identity and small business resilience.

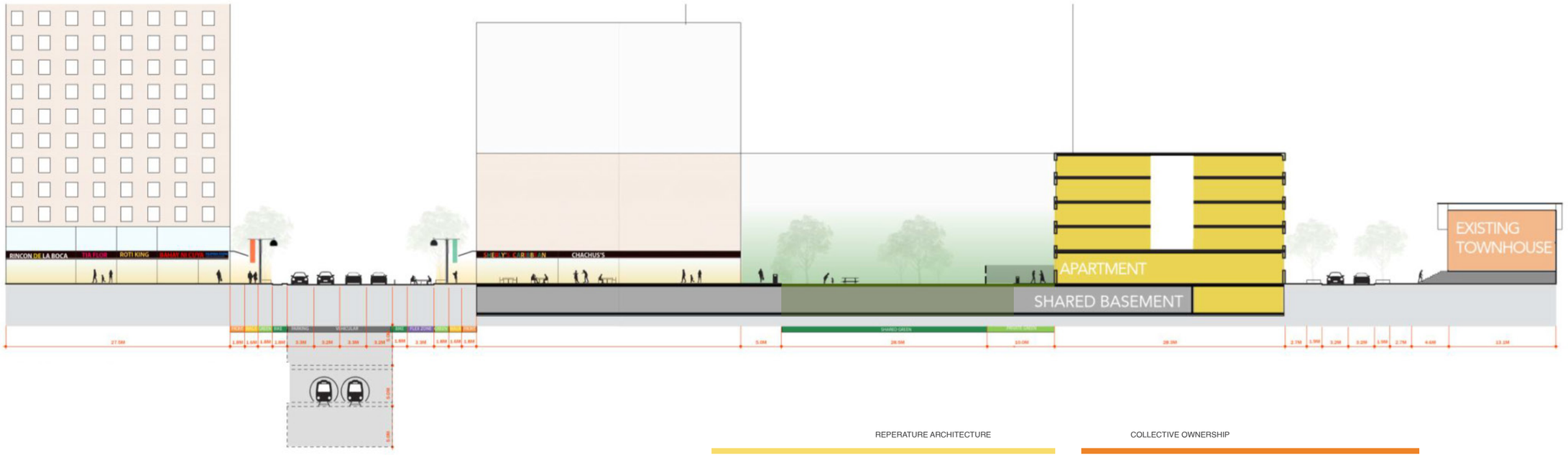
Render of Civic Plaza
A civic heart for Little Jamaica, linking housing, public space, and cultural activity through shared infrastructure.



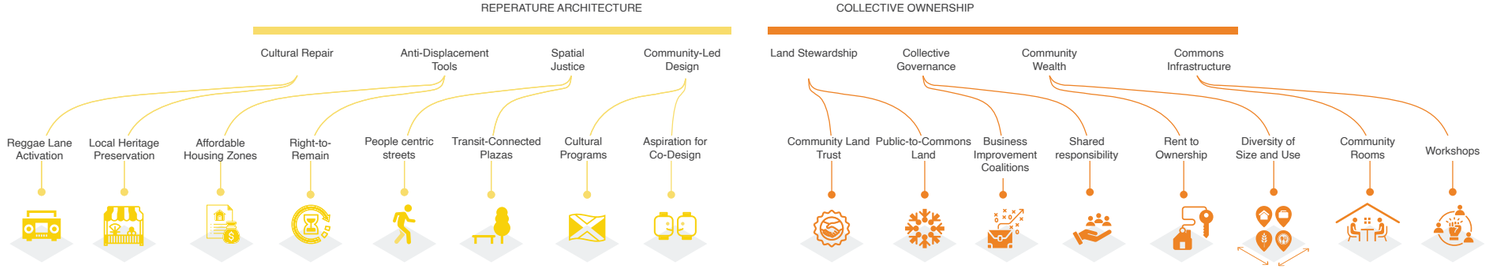
Stakeholder Interview Summary
Insights from community engagement revealing gaps between policy and lived experience.

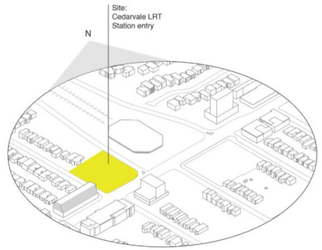


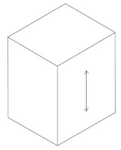
Reggae Lane
Exploring a porous tower where openings, light, and shared spaces create vertical connectivity and social exchange.



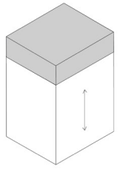
Housing & Livability Corridor
Mixed-use housing, public amenities, and shared infrastructure supporting a livable urban community.



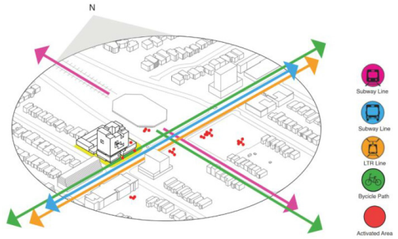


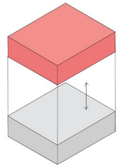


Verticality

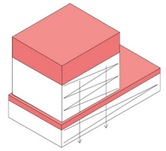


Social Activator
on top

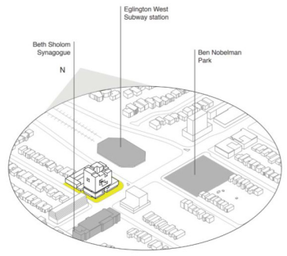




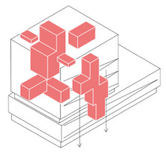
Retail + Station
at bottom



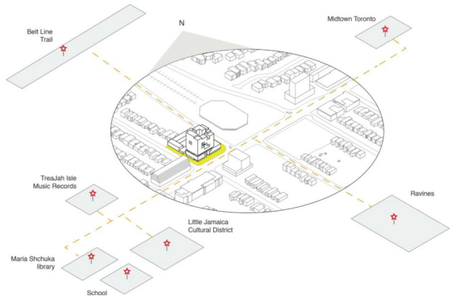
Tower + Podium



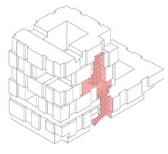
Bringing
Sunlight



Vertical Commons

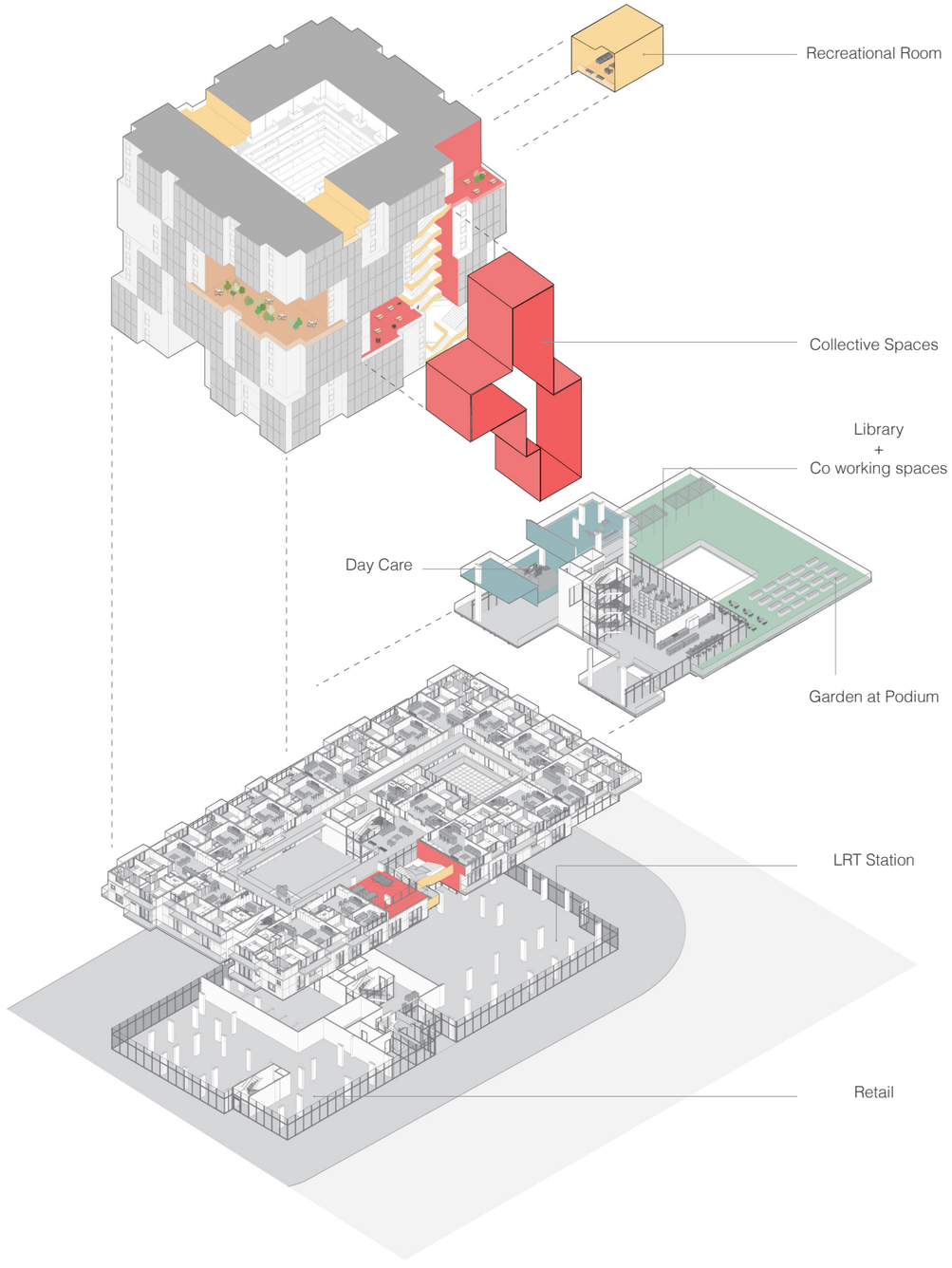


Porous Tower



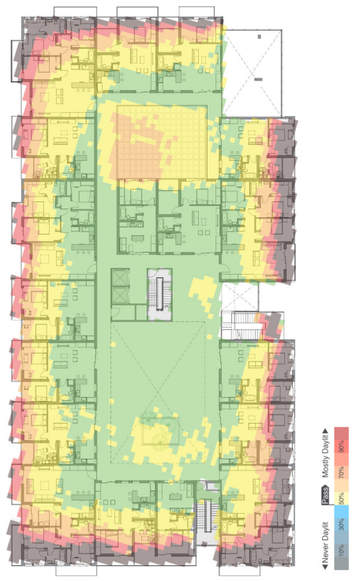
Connected Tower

Parti Diagrams
Exploring a porous tower where openings, light, and shared spaces create vertical connectivity and social exchange.

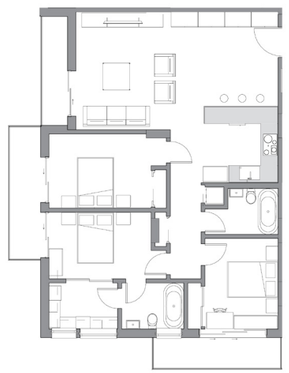


Exploded axonometric
Shows the stacking of retail, transit, and shared programs, connecting everyday life with collective and recreational space.

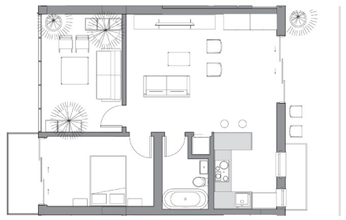
Tpicial Podium Layout



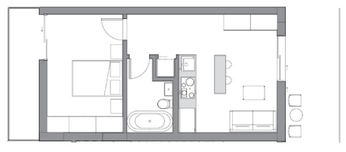
Daylight Analysis



Typ A - Multi generational unit



Typ B - Incremental Unit

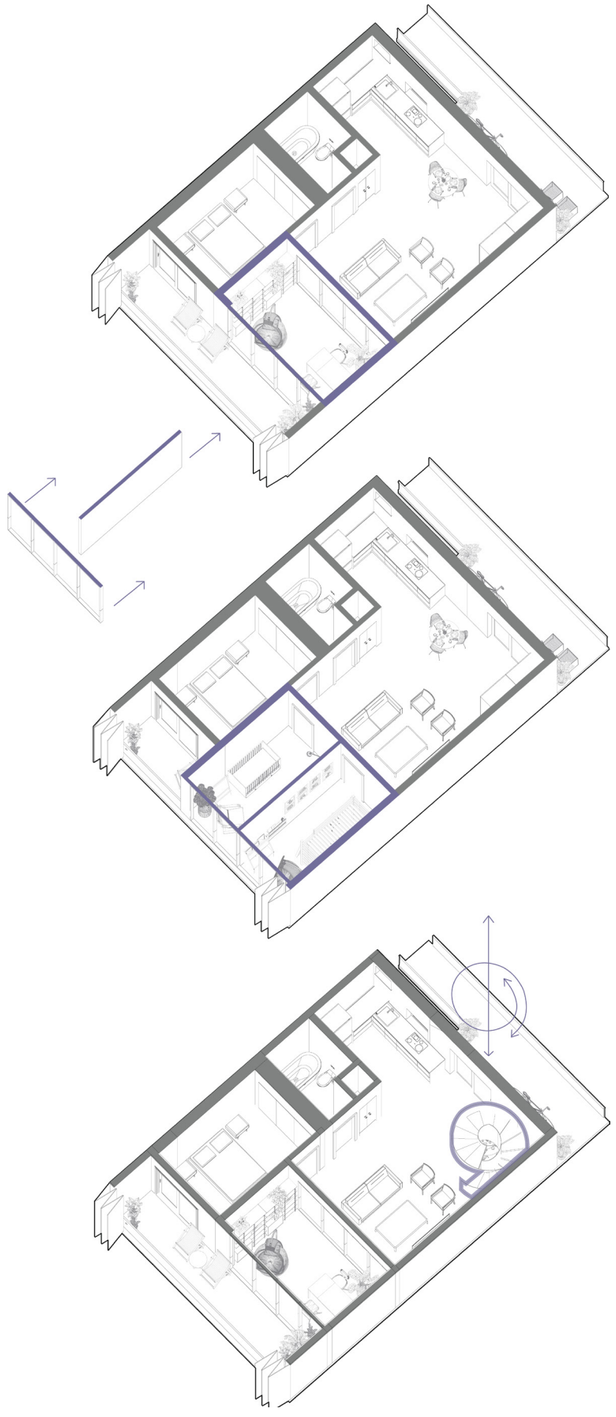


Typ C - Studio layout

Isometric: Initial stage
Incremental Unit is built as Live/ Work space initially.

Isometric: Adapted stage option 1
The incremental unit allows flexible adaptation, where the workspace may transition into a nursery and children's room.

Isometric: Adapted stage option 2
The unit can grow into a duplex by adding internal stairs under the co-op housing framework



05

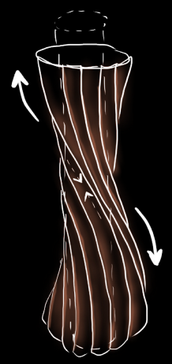
LUMOS

Ceramic Morphologies of Clay 3D printing

Project type: Elective
Exhibition: Canadian Clay & Glass Gallery, Kitchener
Supervisor: Isabel Ochoa, James Clarke-Hicks, David Correa
Intention: Digital Farbrication
Work type: Group
Time: Summer 2025

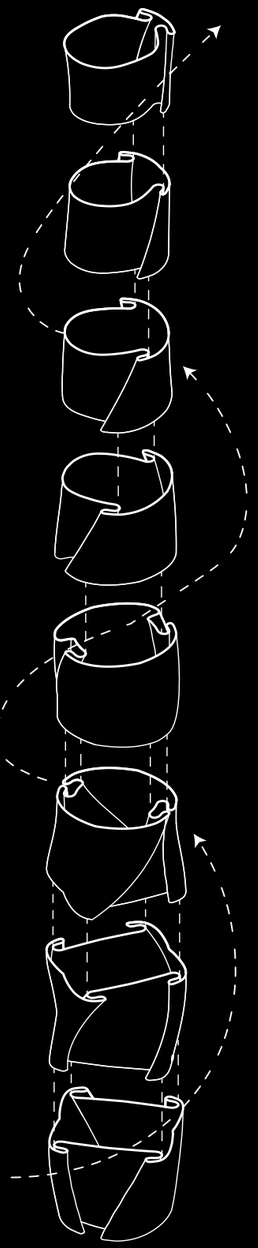
The project investigates how twisting ceramic geometries can choreograph the movement of light. Using ceramic 3D printing, it develops permanent stay-in-place formwork for a concrete column through an iterative series of eight modular components. The column begins with a central pinch that initiates a controlled torsion, allowing light to slip through parallel printed surfaces. At the base, light is captured in tight pockets that cast deep shadows. As the form twists upward, the channels gradually widen, shifting the light from concentrated beams to soft, diffuse illumination. At the top, the geometry releases fully, generating a sense of lift and vertical energy. Through calibrated toolpaths, material deformation, and modular assembly, Lumos transforms the column into a dynamic light sieve, expressing a continuous progression from compression to release.

Winding Form from a Central Pinch Point
The column's shape begins with a central pinch that guides the twist, creating tension and flow, giving the form both strength and fluidity.

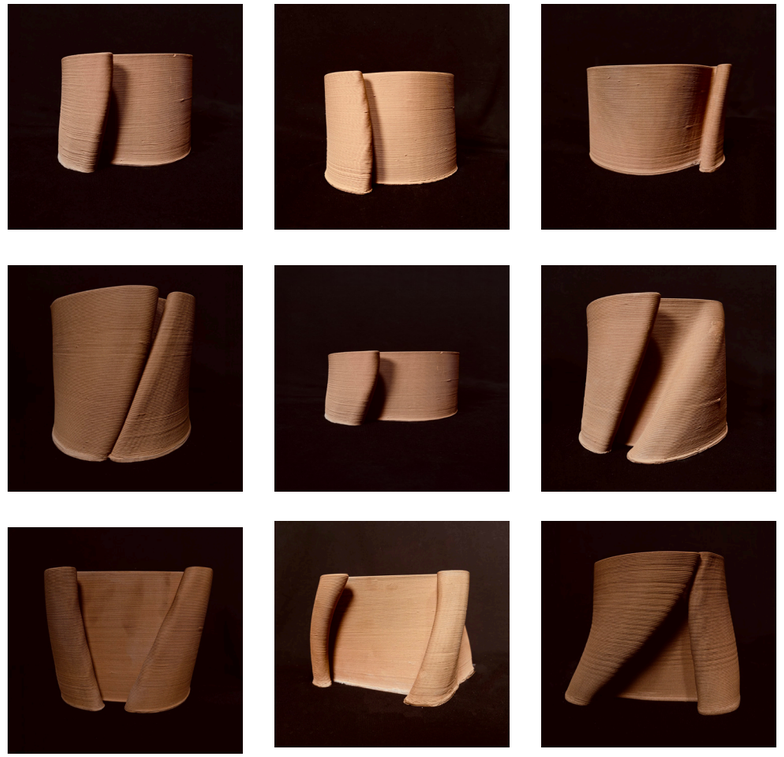


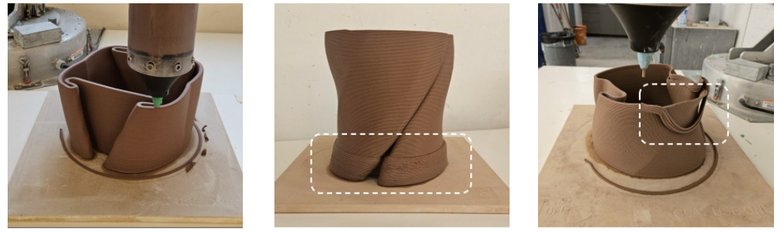
Upward and Downward Light Dispersion
Light flows through the inner channels, casting a soft, ambient glow upwards and focused beams downward, balancing illumination and shadow.

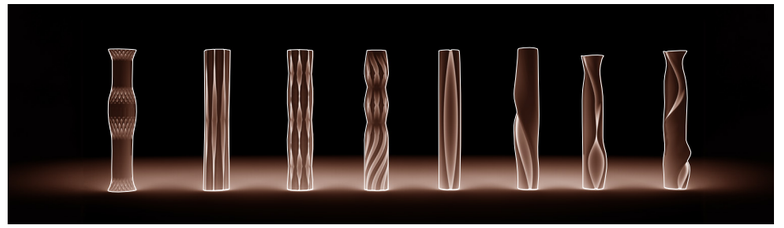
Enhanced Contortion for Soft and Concentrated Light
The twisting intensifies toward the top, diffusing light softly upwards while directing concentrated light downward, enriching the spatial atmosphere.



Twisting light and load path
The column is divided into 8 unique modular components, each designed to facilitate seamless assembly. The design is a iteretative experiment in printing parallel clay surfaces to allow for light pockets.This column transitions light from confined pockets at the base to a fully open diffusion at the top, embodying both strength and elegance.







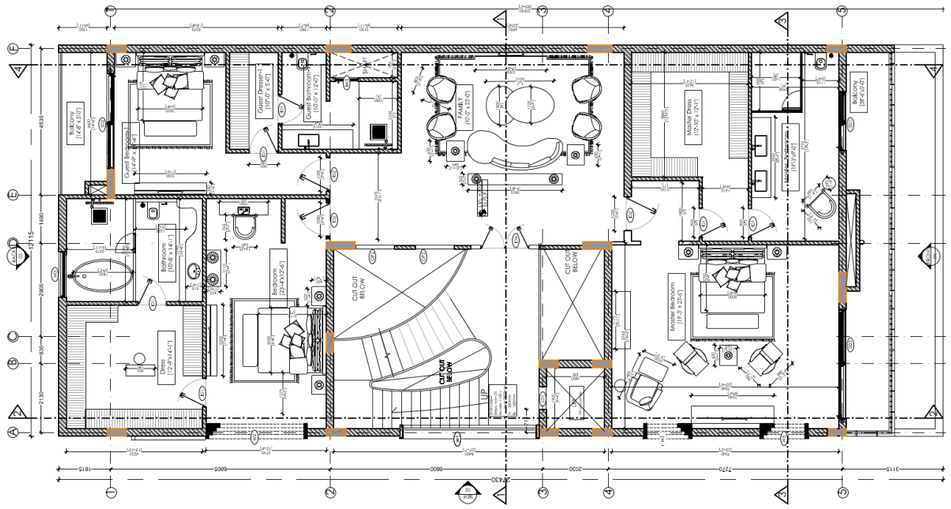
Protoyping
Through 3d modeling and printing multiple designs, the bending and inter layer bonding was tested to its limits. This allowed in achieving a printable and stackable design of concrete column's permanent 3d printed clay formwork. The cove depth was worked out to fit an off the shelf LED strip light, turning the formwork into a luminous sculpture.

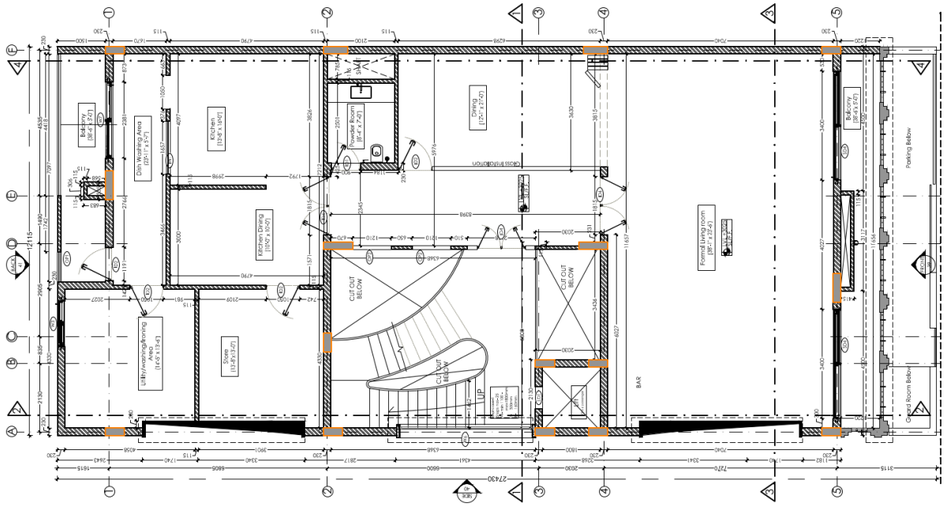
06

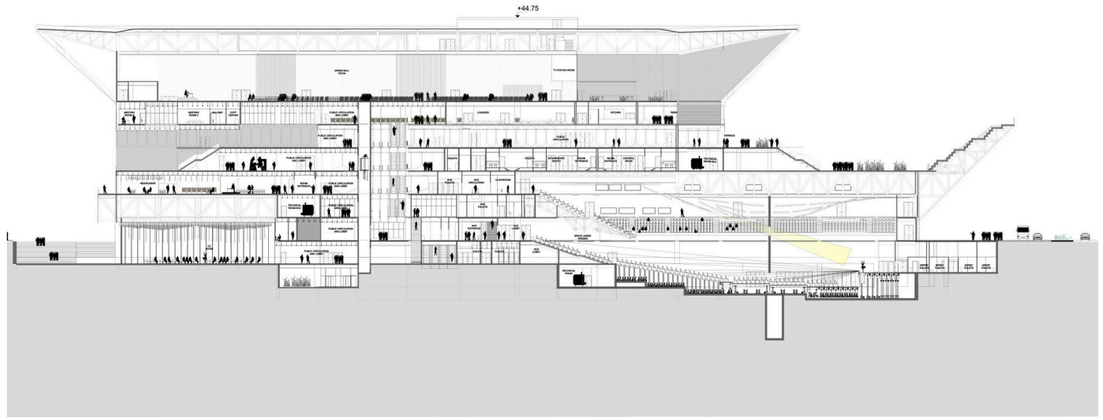
MISCELLANEOUS

Competition and Professional Work

Left: Competition
Design Build for
Winter Station,
Toronto.

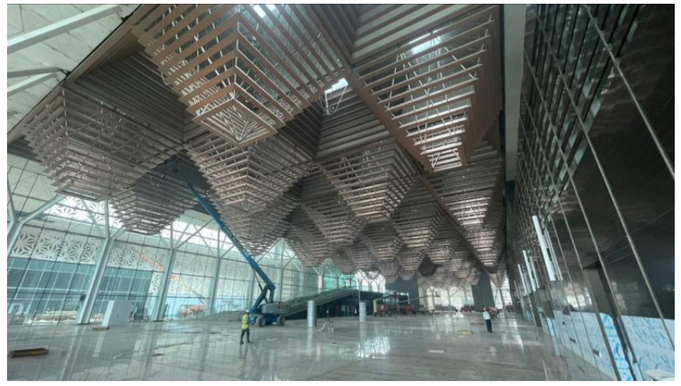


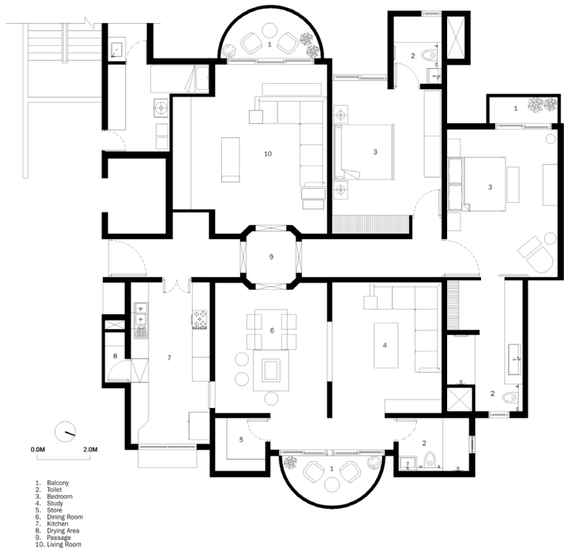


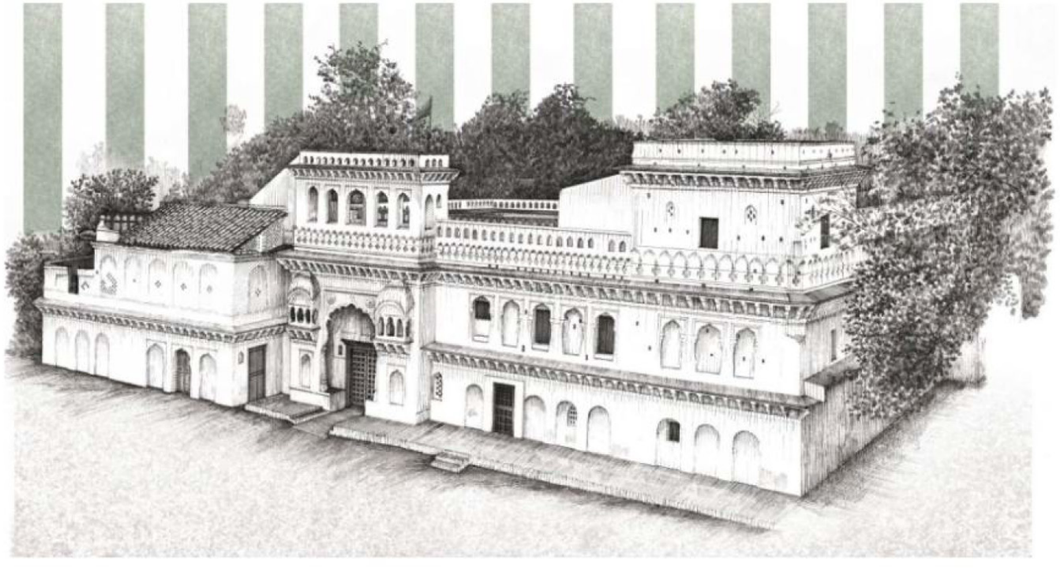


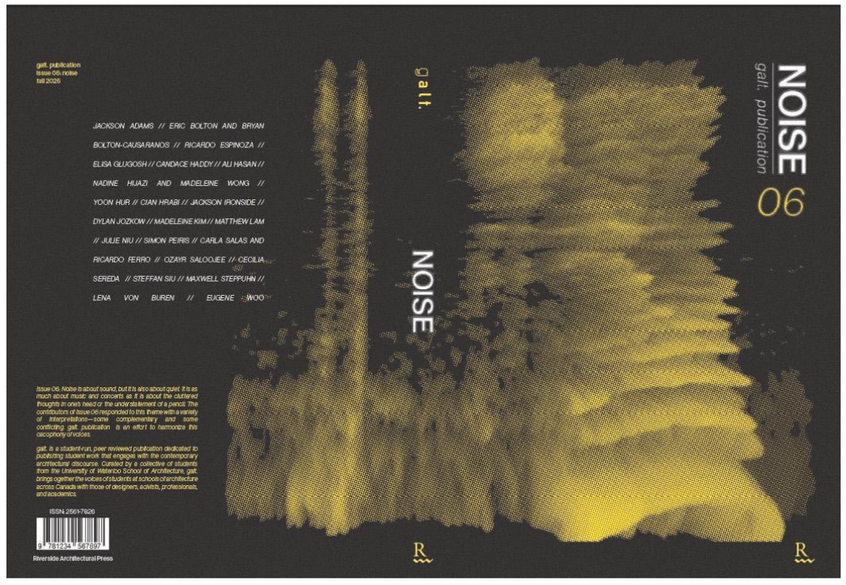
Left: Freelance work
Residence layout of home
in Vasant Vihar, New Delhi.

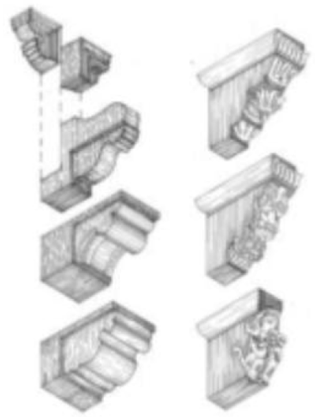
Right: Professional work
Top - Render of Data
Centre for Microsoft in
London, U.K. (GENSLER)
Centre - Section of IIC
community centre, New
Delhi, India. (AECOM)
Bottom - Photograph
during inspection visit
to IIC Community center
Atrium. (AECOM)

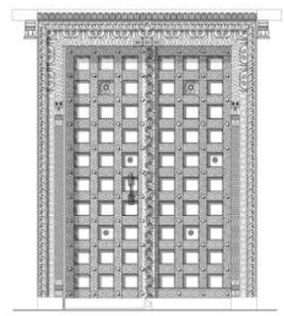








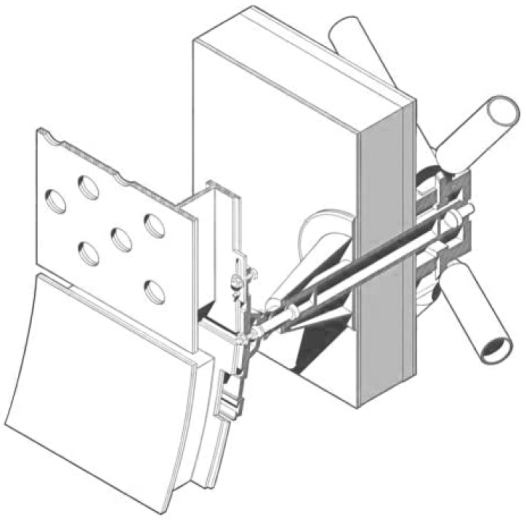




Left Top: Freelance
Floor plan and post construction photographs of Residence design in Gurugram, India with RLDA.

Left Bottom: Publishing
Article published in peer reviewed student run Galt magazine, issue 06

Historical Documentation
Etchings of an old haveli in Jaipur made for the Louis I. Kahn Trophy with a team of university architecture students



Let’s stay connected!

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